

**LIQUID CRYSTAL DISPLAY COLUMN CAPACITANCE  
CHARGING WITH A CURRENT SOURCE**

**ABSTRACT OF THE DISCLOSURE**

A liquid crystal display (LCD) charges column capacitance with quantized charge  
5 injection from a current source. A digital-to-analog converter (DAC) injects amplitude  
and/or time duration controlled current pulses, using a current mirror, to charge each  
column capacitance to a desired voltage charge. The rate of charge is linear and fast, and  
no power is wasted as would be from quiescent current required in a voltage charging  
device used in a voltage injection column capacitance configuration. Variations in  
10 column capacitance may be compensated for by adding capacitance thereto or adjusting  
the amplitude and/or the pulse-width time of a current pulse being injected into the  
column capacitance.